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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,224	07/09/2001	Daniel T. Rumack	1939.BDM	6293

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EXAMINER

YAO, SAMCHUAN CUA

ART UNIT	PAPER NUMBER
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1733

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DATE MAILED: 07/24/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/901,224

Applicant(s)

RUMACK, DANIEL T.

Examiner

Sam Chuan C. Yao

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) 8-21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-7 and 22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 is indefinite because it is unclear what is intended by the phrases "*substantially non-crystalline*", and "*substantially crystalline*". For instance, do the terms "*substantially non-crystalline*" and/or "*substantially crystalline*" read on a semi-crystalline or not. In other words, do these two terms require components to be significantly or simply greater than 50% amorphous and, significantly or simply greater than 50% crystalline, respectively. For the purpose of examining these terms, it is assumed that, these two terms require the material to be significantly greater than 50% amorphous and significantly greater than 50% crystalline, respectively. Note: the phrase "*not more than about 10%*" is taken to read on about 0%.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-3, 5-7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over EP 1,153,997 A1 in view of Admitted Prior Art (APA) and Wolinski (US 3,994,764).

With respect to claims 1-2, 5, 7 and 22, EP '997 discloses a moisture curing polyurethane (PU) hot-melt adhesive comprising: a) amorphous polyol such as an amorphous polyester and/or an amorphous polyether; b) .1-10% by weight of a polyol of a styrene/ally alcohol addition copolymer, the copolymer having a crystalline property at ambient temperature; c) an excess of polyisocyanate; and d) a thermoplastic acrylic resin (taken to be non-reactive). See abstract; page 3 lines 8-44 and claims 1-3. In example 1, for instance, it further teaches using 151.8 g of PPG (i.e. an amorphous polyether polyol), 54 g of castor oil 12 g styrene/ally alcohol, and 246 g DEG-PA polyester (i.e. an amorphous polyester polyol). Hence the weight percent of amorphous PPG is about 25.3 % (i.e this falls within the weight range of a substantially non-crystalline polyol recited in claim 1).

EP ' 997 does not expressly teach adding from about 1-30% of a reactive acrylic polymer. However, it would have been obvious in the art to add a reactive hydroxyl-containing acrylic to a PU hot-melt adhesive composition of EP '997, because the APA discloses that it is a common practice in the art to add a reactive hydroxyl-containing acrylic and non-reactive acrylic to a reactive PU hot-melt adhesive to improve the adhesive performance (specification; page 2 full

paragraph 1). Moreover, absent any showing of unexpected benefit, it would have been obvious in the art to add around recited amount of reactive hydroxyl-containing acrylic as such is taken to be well known in the art of making a reactive PU adhesive as exemplified in the teachings of Wolinski (abstract; col. 56 to col. 7 line 11; col. 8 lines 11-20). Moreover, one in the art would have determined, by routine experimentation, a workable/optimal amount of reactive acrylic to be added to an adhesive composition taught by EP '997.

With respect to claims 3 and 6, in example 1, for instance, EP '997 also teaches using about 41 weight percent of DEG-PA polyester. About 40% recited in this claim is taken to read on about 41 percent by weight. Moreover, since one in the art would have determined a suitable amount of amorphous polyester and/or non-reactive acrylic to optimize the adhesive composition of EP '997, these claims would have been obvious in the art.

5. Claims 1-7 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oien (US 5,753,747) in view of Admitted Prior Art (APA) and Wolinski (US 3,994,764).

With respect to claims 1-3, 5, 7 and 22, Oien discloses a hot melt PU reactive adhesive filler for articles, the filler comprises a) a 1st reaction product of a polyisocyanate and a semi-crystalline polyester polyol (taken to contain significant amount of crystalline), the weight proportion of the 1st reaction product is around 6-37%; and b) a 2nd reaction product of polyisocyanate and an amorphous polyether glycol, the weight proportion of the 2nd reaction product is

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around 27-80 % (col. 1 lines 10-16; col. 5 lines 6-25). It is taken that, the recited composition of the "*substantially non-crystalline polyol*" overlaps the composition taught by Oien (see the above weight ranges). In any event, absent any showing of unexpected result, one in the art would have determined, by routine experimentation, an optimal compositional range in making an adhesive of Oien. Furthermore, the recited percent compositional ranges for "*substantially non-crystalline polyol*" is taken to be old in the art. For these reasons, they would have been obvious in the art.

As for the recited amount of functional acrylic polymer in claim 1, it would have been obvious in the art to add a reactive hydroxyl-containing acrylic and non-reactive acrylic to a PU hot-melt adhesive composition of Oien, because the APA discloses that it is a common practice in the art to add a reactive hydroxyl-containing acrylic and non-reactive acrylic to a PU hot-melt adhesive to improve the adhesive performance (specification; page 2 full paragraph 1). Moreover, absent any showing of unexpected benefit, it would have been obvious in the art to add around recited amount of reactive hydroxyl-containing acrylic as such is taken to be well known in the art of making a reactive PU adhesive as exemplified in the teachings of Wolinski (abstract; col. 56 to col. 7 line 11; col. 8 lines 11-20).

With respect to claim 4, as noted above, semi-crystalline is taken to contain a significant amount of crystalline, hence the phrase "*substantially crystalline*" reads to semi-crystalline. In any event, it would have been obvious in the art to

use a crystalline polyester polyols in making a hot-melt PU adhesive of Oien, because the APA discloses that it is well known in the art of making a hot-melt PU reactive adhesive to incorporate crystalline polyester polyols in order to enhance the green strength of the resultant adhesive (specification; page 2 full paragraph 1).

With respect to claim 6, absent any showing of expected result, one in the art would have determined a workable weight range of non-reactive acrylic to be added to the PU adhesive taught by Oien. Moreover, the recited amount is taken to be conventional in the art.

Response to Arguments

6. Applicant's arguments filed on 06-24-03 have been fully considered but they are not persuasive.

Counsel argues in full paragraph 1 of the remarks that, *"Brinkman discloses a hot melt adhesive having a completely different system having different performance and characteristics than the reactive hot-melt adhesive of the present invention. In particular, Brinkman discloses a hot melt adhesive that contains styrene/allyl component."* (emphasis added). It is respectfully submitted that, Counsel's argument is not commensurate with the scope of the recited claims. There is nothing in the recited claims which remotely require any adhesive performance characteristics, much less preclude an inclusion of a crystalline polyol of styrene/allyl component. As for Counsel's assertion that, *"there is no indication whatsoever that an acrylic polymer would be useful in a system that contains a*

styrene/allyl alcohol component, such as that of Brinkman." (emphasis added), Examiner strongly disagrees. Counsel's attention is directed to page 3 paragraph 0014 of the Brinkman patent. Brinkman clearly teaches incorporating thermoplastic (i.e. non-reactive) acrylic resins to a hot-melting PU adhesive composition containing a styrene/allyl alcohol component. Moreover, since it is a common practice in the art to incorporate a reactive and non-reactive acrylic resins to improve the performance of a hot-melt PU adhesive (specification; page 2 full paragraph 1), it would have been obvious in the art to also include a reactive acrylic resin in making a hot-melting PU adhesive taught by Brinkman. Finally, as for Counsel's argument that the styrene/allyl alcohol is crystalline at ambient temperature, claim 1 as presently recited does not preclude having a crystalline polyol in a PU hot-adhesive adhesive composition. In fact, claim 1 explicitly requires having up to 10% by weight of a substantially crystalline polyol. Note that, the amount of a polyol of styrene/allyl copolymer component taught by Brinkman ranges from 0.1 to 10% by weight (abstract).

Counsel further argues in a following full paragraph that *"Unlike the one-part adhesive of the present invention, Wolinski discloses a two-part adhesive that requires the use of an activator."* It is again respectfully submitted that, Counsel's argument is not commensurate with the scope of the recited claims. There is nothing in the recited claims which remotely require a one-part PU hot melt adhesive composition. Moreover, Wolinski is merely used as evidence to

show that the recited weight range of an acrylic is old in the art of making a reactive PU adhesive.

As for Counsel's argument regarding Oien in view of the APA and Wolinski, as noted earlier, the claims as presently recited does not preclude forming a two-part adhesive composition. Moreover, the claims as presently recited do not preclude an inclusion of a filler (note, the claims application of an open transitional phrase: comprising).

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sam Chuan C. Yao whose telephone number is (703)

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308-4788. The examiner can normally be reached on Monday-Friday with second Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael W Ball can be reached on (703) 308-2058. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 305-7115 for regular communications and (703) 305-7718 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0651.



Sam Chuan C. Yao
Primary Examiner
Art Unit 1733

scy
July 23, 2003